

## CLAIMS

bbB 1. A furnace for drawing an optical fiber comprising a muffle tube and an inner tube connected to an end of the muffle tube, arranging inside said muffle tube and said inner tube a preform supported by a dummy rod at an upper part thereof, in such a manner that said preform descends with said dummy rod and said preform is melted by a heater arranged outside of said muffle tube, so as to draw an optical fiber from the lower end of said preform, wherein one set or plural sets of separating plates separate a space inside said inner tube above said preform into plural parts in an advancing direction of said preform arranged inside said space, and a gas blowing inlet for blowing an inert gas into said inner tube and said muffle tube is provided at the wall of said inner tube at a part under said separating plate.

2. A furnace for drawing an optical fiber as claimed in claim 1, characterized in that said plural sets of separating plates being penetrated by said dummy rod descend with said dummy rod, and said respective sets of said plural sets of separating plates are stopped one by one on said inner wall of said inner tube from an upper part, so that said space inside said inner tube above said preform is separated into an upper part and a lower part by each said stopped separating plate.

3. A furnace for drawing an optical fiber as claimed in claim 2, characterized in that the outer diameters of said respective separating plates of the plural sets decrease gradually one by one from the upper part to the

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lower part, that said inner tube has a truncated cone shape by decreasing the inner diameter thereof from the upper part to the lower part, that said plural sets of separating plates descend with said dummy rod, and that said plural sets of separating plates are stopped in their descent one set by one set from the upper part owing to the contact of the outer periphery of said separating plate with the inner wall of said inner tube.

4. A furnace for drawing an optical fiber as claimed in claim 2 ~~or claim 3~~, characterized in that at least one set of said plural sets of separating plates is composed of an outer member and an inner member, that an outer diameter of said outer member is the same as the inner diameter of said inner tube at a position where said outer member is stopped by said inner tube, and it is further characterized in that the center hole diameter of said outer member is larger than the outer diameter of said dummy rod so as to absorb the deviation from a concentric condition of said inner tube and said dummy rod, and the outer diameter of said inner member is larger than said center hole diameter of said outer member and is smaller than said outer diameter of said outer member, and the center hole diameter of said inner member is larger than said outer diameter of said dummy rod, and said dummy rod penetrates through said center holes while said outer member is placed at the lower side and said inner member is placed at the upper side, so as to support said inner member by said outer member when said outer member of said separating plate is stopped by said inner wall of said inner tube.

5. A furnace for drawing an optical fiber as claimed in claim 1,

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characterized in that said one set or plural sets of separating plates are arranged in the vicinity of the lower end of said dummy rod or the upper part of said preform to descend with said preform.

6. A furnace for drawing an optical fiber as claimed in claim 5, characterized in that said one set or plural sets of separating plates are composed of an outer member and an inner member, that the outer diameter of said outer member is smaller than the inner diameter of said inner tube, the center hole diameter of said outer member is larger than the outer diameter of said dummy rod so as to absorb the deviation from a concentric condition of said inner tube and said dummy rod, that the outer diameter of said inner member is larger than said center hole diameter of said outer member and smaller than said outer diameter of said outer member, that the center hole diameter of said inner member is the same as or larger than said outer diameter of said dummy rod, and said dummy rod penetrates through said center holes while said inner member is placed at the lower side and said outer member is placed at the upper side, so as to support said inner member by placing said outer member on said inner member, and by placing said inner member on a supporting member fixed to said dummy rod or by fixing said inner member to said dummy rod.

7. A furnace for drawing an optical fiber as claimed in ~~one of claim 1, claim 2, claim 5 or claim 6~~<sup>claim 1</sup>, characterized in that plural protrusions are provided on the outer periphery of the separating plate, so as to prevent parts of said separating plate other than said protrusions from contacting

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said inner wall surface of said inner tube.

8. A furnace for drawing an optical fiber as claimed in claim 1, characterized in that said separating plate comprises a heat insulating material.

5 9. A furnace for drawing an optical fiber as claimed in claim 8, characterized in that said separating plate comprises a heat insulating material formed of carbon felt.

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10 10. A furnace for drawing an optical fiber as claimed in claim 1 ~~or claim 8~~, characterized in that an auxiliary heater is arranged outside a vicinity of an upper end of said inner tube, so as to heat an upper space inside said inner tube.

11. A method for drawing an optical fiber comprising : arranging a preform supported by a dummy rod at an upper part thereof inside a muffle tube and an inner tube connected to an end of the muffle tube in such a manner that  
15 said preform descends with said dummy rod, and melting said preform by heating to draw an optical fiber from said preform, characterized in that while one set or plural sets of separating plates are arranged inside said inner tube to vertically separate a space inside said inner tube into plural parts, the vicinity of the lower end of said preform is melted while an inert gas flows into  
20 the inside of said inner tube and a muffle tube via a gas blowing inlet provided on a wall of said inner tube under said separating plate, so as to draw an optical fiber from a lower end of said preform.

12. A method for drawing an optical fiber as claimed in claim 11, characterized

in that while a vertical temperature difference in an upper space inside said inner tube is reduced by heating a vicinity of an upper end of said upper space inside said inner tube by an auxiliary heater, said vicinity of said lower end of said preform is heated and melted by a heater arranged outside said muffle  
5 tube, so as to draw an optical fiber from said lower end of said preform.

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